

WHAT IS CLAIMED IS:

1. A laminated optical disc manufacturing apparatus comprising:

an adhesive applying device adapted to apply an adhesive to a first substrate, forming an adhesive layer having a specific thickness between the first substrate and a second substrate superimposed onto the first substrate; and

a suction device adapted to suction the adhesive layer formed between the first substrate and the second substrate with a predetermined suction force.

2. The laminated optical disc manufacturing apparatus according to claim 1, further

comprising a provisional bonding device adapted to partially cure the suctioned adhesive layer to partially bond and provisionally fasten the first substrate and the second substrate.

3. The laminated optical disc manufacturing apparatus according to claim 1, the adhesive comprising a radiation cure resin.

4. The laminated optical disc manufacturing apparatus according to claim 1, the adhesive comprising a thermoplastic resin.

5. The laminated optical disc manufacturing apparatus according to claim 1, further comprising:

a layer thickness measuring device adapted to measure an actual thickness of the adhesive layer between the first substrate and the second substrate;

a layer thickness difference detection device adapted to determine an adhesive layer

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thickness difference between the measured adhesive layer thickness and a target adhesive layer thickness; and

a control device adapted to control at least the adhesive applying device based on the adhesive layer thickness difference.

6. The laminated optical disc manufacturing apparatus according to claim 1, further comprising:

a spreading device adapted to integrally rotate the superimposed first substrate and second substrate at a predetermined application rotational speed;

wherein the adhesive applying device is further adapted to apply the adhesive at the predetermined application rotational speed onto a predetermined radial position on a first surface of the first substrate, the adhesive forming an annular mound having a top edge of a narrow peak shape in cross section;

wherein the second substrate is superimposed onto the first substrate by contacting the top edge of the annular mound with the second substrate; and

wherein the annular mound is spread from the predetermined radial position toward an outside circumference of the first substrate to form the adhesive layer between the first substrate and the second substrate.

7. The laminated optical disc manufacturing apparatus according to claim 2, the provisional bonding device further comprising a centering cylinder insertable within a

common center hole of the superimposed first and second substrates, the centering cylinder comprising at least two contact pins which retractably extend in substantially opposite directions and press against an inside circumferential edge of the center hole in the superimposed first and second substrates.

8. The laminated optical disc manufacturing apparatus according to claim 7, the provisional bonding device being further adapted to cure the suctioned adhesive layer in proximity to the center hole in the superimposed first and second substrates.

9. The laminated optical disc manufacturing apparatus according to claim 2, further comprising a bonding device for completely curing the partly cured adhesive layer and completely bonding the first and the second substrates throughout the adhesive layer.

10. The laminated optical disc manufacturing apparatus according to claim 2, further comprising a warping prevention device that provisionally bonds a partially bonded portion of the first and the second substrates and preventing deformation of the provisionally bonded first and second substrates.

11. The laminated optical disc manufacturing apparatus according to claim 1, further comprising:

an adhesive supply source adapted to supply the adhesive to the adhesive applying device, the adhesive being controlled to have a first predetermined temperature; and
a defoaming tank adapted to remove bubbles from the adhesive at a second

predetermined temperature, the second predetermined temperature being higher than the first predetermined temperature.

12. The laminated optical disc manufacturing apparatus according to claim 11, the adhesive supply source comprising:

an adhesive recovery tank for recovering adhesive unused in the formation of the adhesive layer; and

a filter adapted to filter the recovered adhesive at a third predetermined temperature higher than the first predetermined temperature;

wherein the defoaming tank is further adapted to remove bubbles from the filtered adhesive.

13. The laminated optical disc manufacturing apparatus according to claim 12, wherein the second predetermined temperature is equal to the third predetermined temperature.

14. A laminated optical disc manufacturing method comprising:

applying an adhesive to a first substrate to form an adhesive layer having a specific thickness between the first substrate and a second substrate superimposed onto the first substrate; and

suctioning the adhesive layer formed between the first substrate and the second substrate with a predetermined suction force.

15. The laminated optical disc manufacturing method according to claim 14, further comprising:

partially curing the suctioned adhesive layer to partially bond and provisionally fasten the first substrate and the second substrate.

16. The laminated optical disc manufacturing method according to claim 14, further comprising:

rotating the superimposed first substrate and second substrate at a predetermined spreading rotational speed;

applying the adhesive at the predetermined spreading rotational speed onto a predetermined radial position on a first surface of the first substrate, the adhesive forming an annular mound having a top edge of a narrow peak shape in cross section; and

superimposing the second substrate onto the first substrate by contacting the top edge of the annular mound with the second substrate;

wherein the annular mound is spread from the predetermined radial position toward an outside circumference of the first substrate to form the adhesive layer between the first substrate and the second substrate.

17. The laminated optical disc manufacturing method according to claim 14, further comprising inserting a centering cylinder within a common center hole of the superimposed first and second substrates, the centering cylinder comprising at least two contact pins which



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retractably extend in substantially opposite directions; and

pressing the at least two contact pins against an inside circumferential edge of the center hole to align the superimposed first and second substrates.

18. The laminated optical disc manufacturing method according to claim 17, further comprising curing the suctioned adhesive layer in proximity to the center hole in the superimposed first and second substrates.

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a)* 19. The laminated optical disc manufacturing apparatus according to claim 15, further comprising completely curing the partly cured adhesive layer and completely bonding the first and the second substrates throughout the adhesive layer.